

From *G. nepalensis**, to which this species is most nearly allied, it differs in its decidedly darker primaries, its more falcate, more elongated, and altogether larger wings, and the (consequently) larger orange spots on the wings, also in the less sinuous outer margin of the secondaries: from *G. aspsia*, to which most of these very characters prove its affinity, it differs in its slightly paler primaries and darker secondaries; the brown edging to the wings and the distinct separation of the under surface into two colours, as in the *G. rhamni* group.

The following species was captured on Mount Tabor by B. Lowne, Esq. :—

Gonepteryx antonia, sp. n.

Nearest to *G. cleopatra*, of the same brilliant yellow above, but with the large diffuse orange patch on the primaries replaced by a much paler diffused saffron-yellow nebula, and not extending so near to the margins. Under surface almost as uniformly coloured as in *G. rhamni*, whereas in *G. cleopatra* the costal area of primaries and the secondaries are of a chalky greyish-green tint. Expanse of wings 62 millim.

Mount Tabor, Syria. B. M.

This species must be placed between *G. rhamni* and *G. cleopatra*.

XXXVII.—*New Genera and Species of Fossil Cockroaches from the Older American Rocks.* By SAMUEL H. SCUDDER †.

SINCE the publication of my essay on Palæozoic cockroaches ‡, a considerable number of new types of Palæoblattariæ have come to hand, largely through the endeavours of Mr. R. D. Lacey, to whose favour I owe the opportunity of studying them, and partly from my exploration of an interesting locality in South Park, Colorado. Some of the former have since been published in a revision of the species of *Mylacris* §, and the more interesting of such as remain are described in this paper.

The two new genera of Mylacridæ are closely allied to, but differ considerably from, the known genera. Of the Blattinariæ, the species of *Oryctoblattina* is the first secured from

* I originally recorded the male under this name, not having placed it side by side with the Indian species; it is doubtless a similar omission which has led Mr. Pryer to regard it as *G. rhamni*.

† From the 'Proceedings of the Academy of Natural Sciences of Philadelphia,' March 10, 1885, pp. 34-39.

‡ Mem. Bost. Soc. Nat. Hist. iii. pp. 23 et seq.

§ *Ibid.* iii. pp. 299 et seq.

America ; and the Triassic genera and species are interesting, not only from the deposit in which they occur, but also from their relation to Carboniferous and Liassic types*. They will all be figured on another occasion.

PROMYLACRIS (*πρό, μυλακρίς*), nov. gen.

The mediastinal vein, though large and abundantly supplied with veins, terminates not far beyond the middle of the wing ; most of the branches fork more than once ; the scapular vein runs in nearly a straight course, and terminates a short distance beyond the mediastinal, playing a very insignificant part ; the externo-median vein is far more important, crowding back the scapular vein on the one side and the externo-median on the other ; the anal furrow is very deeply impressed and the anal area strongly convex, its veins regular, frequent, and strongly curved.

Promylacris ovalis, nov. sp.

Represented by a single specimen and its reverse in a nodule preserving well the anterior half of the body. The pronotum is regularly arched, about one fourth as high as broad, and twice as broad as long. The front wings have a strongly developed humeral lobe and a costal margin of considerable convexity. The mediastinal branches are clustered into three groups ; the scapular vein is composed of only two branches, each of which forks with slight divarication ; the externo-median vein has three principal branches, all of which originate far toward the base of the wing ; the interno-median area is unusually small, apparently not reaching so far out as the scapular area. The fragment is 20 millim. long, and the wing 12 millim. broad, but it was probably about 29 millim. long.

Carboniferous deposits of Mazon Creek, Ill. Received from Mr. Wm. Gurley.

PAROMYLACRIS (*πάρως, μυλακρίς*), nov. gen.

The mediastinal vein consists of at least seven or eight principal branches, several of them forking close to the base, the outermost extending far toward the tip of the wing, making this area unusually important ; the scapular is also important, the main vein running through the middle of the wing in a straight course to the tip ; the externo-median branches do not

* Amer. Journ. Sc. (3) xxviii. pp. 199 *et seq.*

separate widely, and occupy on the margin of the wing only the lower half of the broad apex; the anal furrow is deeply impressed, and strikes the middle of the inner margin.

Paromylacrís rotunda, nov. sp.

The single specimen shows the larger portion of the upper surface, and all the more important parts, visible from above. The whole body is strongly arched, and the central portion of the pronotal shield, which is twice as broad as long, is elevated about 4.5 millim. above the margins. The front wings are obovate, scarcely narrower at tip than at base, barely twice as long as broad; the humeral angle very prominent. The scapular vein has four or five straight superior branches; the externo-median vein runs parallel to the scapular, and has two dichotomizing branches. The length of the wing is 29.5 millim., and its width 15 millim.

Carboniferous deposits of Mazon Creek, Ill. (Mr. R. D. Lacey, No. 2026).

Spiloblattina (*σπίλος*, *Blattina*), nov. sp.

This genus is allied to *Etoblattina*, but differs from it and from all other genera of Blattinariae in the divergence of the scapular and externo-median veins beyond the middle of the wing, and then their rapid convergence beyond a more or less conspicuous elongated spot (whence the generic name) which fills the space so produced; a similar arrangement is seen even more conspicuously between the externo-median and interno-median veins, where the spot is much larger and round. All the species are Triassic.

Spiloblattina Gardineri, nov. sp.

A number of specimens of this were found, some of them nearly perfect. The wing is long and slender, more than three times as long as broad, the tip roundly produced. The mediastinal vein terminates some way beyond the middle, approaching the margin very gradually; the scapular runs parallel to the costal margin, slightly more removed from it in the apical than in the proximal half, and terminates a little before the tip of the wing; it has many branches, usually compound; the externo-median vein begins to branch usually in the middle of the wing, about opposite the stigma, in the interspace between it and the scapular vein, and its branches fill the apex of the wing. To form the enlarged cell for the median stigma, the curve of the main externo-median vein is graceful and very gradual. The anal terminates far before

the middle of the wing. Length of wing about 17.5 millim., width 5.5 millim. Named after my son, who obtained the first and best specimen seen in our exploration of the beds.

Triassic beds near Fairplay, Colorado.

Spiloblattina triassica, nov. sp.

In this species the wing appears to be more slender than in the others, although the exact proportions cannot be given from the imperfection of the specimens; all the branches have a more longitudinal and less arcuate course, the externo-median and scapular veins scarcely part from each other to give place to the stigma, and the divergence of the former and the interno-median veins is also less conspicuous. The wing was probably about 18 millim. long and 5 millim. broad.

Triassic beds near Fairplay, Colorado.

Spiloblattina guttata, nov. sp.

This species differs from the others in the stoutness of the wing, which is proportionally much shorter than any of the others; in keeping with this peculiarity is the greater width of both the mediastinal and scapular areas, and the more rapid descent to the margin of the termination of at least the former. In other respects the species completely resembles *S. Gardineri*. Two fragments only were obtained, which indicate a wing about 15 millim. long and 7 millim. broad.

Triassic beds near Fairplay, Colorado.

Spiloblattina marginata, nov. sp.

This species, of which only a single specimen was found, is remarkable for the paucity of its neuration, and for the fact that all the veins and branches are margined with a slender dark edging. The scapular vein recedes more than usually from the costal margin opposite the very slight median stigma, and the externo-median vein is consequently more than usually curved to make place for it. The probable length of the wing was 18 millim. The inner margin being lost, the width can hardly be more than conjectured; but it was perhaps 7 millim.

Triassic beds near Fairplay, Colorado.

Oryctoblattina occidua, nov. sp.

The veins appear to originate from the middle of the upper half of the base of the wing, and have scarcely the least basal arcuation. The mediastinal vein runs at but slight

distance from, and nearly parallel to, the costal border, in the outer half constantly but gradually approaching it, emitting numerous oblique, generally simple branches; the vein terminates in the middle of the outer half of the wing, and shows no such peculiarities at its tip as characterize *O. reticulata* of Europe. The scapular vein is also not so peculiar as there; it runs in near proximity and parallel to the mediastinal vein, but there is the same slight bend in its course at the base of the principal branch; the mass of the branches, which are fewer than in *O. reticulata*, do not arise as there from a vein emitted abruptly from near the base of the second branch, to which they are inferior, but from the principal branch itself, to which they are superior. The interno-median vein terminates at about the end of the middle third of the wing, and has only a few branches. The externo-median branches all terminate on the inner margin. The length of the wing is 19 millim., its breadth 7 millim.

Carboniferous beds of Mazon Creek, Illinois (R. D. Lacoë, No. 2039).

Petrablattina aqua, nov. sp.

Mediastinal vein terminating scarcely beyond the middle of the costal margin, with numerous, closely crowded, simple branches; scapular vein terminating above the tip of the wing, and beyond the basal curve nearly straight, with four or five singly forking branches; branches of externo-median vein straight, superior, mostly simple, parallel to the main scapular vein; the interno-median area extending to some distance beyond the middle of the wing. It is a tolerably large species, the wing measuring 24 millim. in length and 10 millim. in breadth.

Triassic beds near Fairplay, Colorado.

Petrablattina Meieri, nov. sp.

Mediastinal vein terminating a long way beyond the middle of the costal border, with comparatively distant, usually simple branches. Scapular vein terminating just below the tip of the wing and beyond the basal curve, gently arcuate throughout, with branches similar to those of *P. aqua*, but occupying a larger area. In consequence the externo-median area is of less importance than in *P. aqua*, and it has but few branches, which appear to be generally simple and slightly declivent, though superior. Unfortunately this portion of the wing in the single specimen known is very obscure. The interno-median vein is not preserved in its outer portion,

but it evidently reached the border nearer the base than the mediastinal vein, and the anal furrow is strongly curved. The wing is broken at the base, but its probable length was 19 millim. and its breadth 7 millim. It is named after Mr. Robert A. Meier, of Garo, Col., in whose shaft all these specimens were obtained, and who afforded our party all possible assistance in working them.

Triassic beds near Fairplay, Colorado.

POROBLATTINA (*πόρος*, *Blattina*), nov. gen.

Allied to *Petrablattina*, and especially the species of that genus found in the same Triassic rocks, differing from them principally in the insignificant part played by the mediastinal area and the corresponding importance of the scapular area. The mediastinal vein extends no further out than the anal, terminating far before the middle of the wing, and has consequently but a few offshoots; while the mediastinal, sweeping downward away from the costal margin at the termination of the mediastinal, occupies nearly half of the wing before curving upward again to terminate above the apex. The externo-median vein is arcuate and terminates on the lower margin not far from the tip, and has only three or four superior longitudinal branches. The anal furrow is strongly arcuate. The anal veins are nearly parallel to the inner margin, but impinge upon it near the anal furrow.

Poroblattina arcuata, nov. sp.

The costal border is considerably convex. The scapular vein is unusually arcuate, and has a large number of mostly simple oblique branches. The externo-median and interno-median veins, on the contrary, have few and distant branches, and the former is also strongly arcuate. The whole surface of the wing is broken by closely crowded cross-veins, which are more transverse to the whole wing than to the interspaces. A single rather imperfect specimen is known, indicating a species with a wing about 10 millim. long; the width is 4 millim., and apparently the wing was well rounded and much shorter in proportion to its breadth than in the next species.

Triassic beds near Fairplay, Colorado.

Poroblattina Lakesii, nov. sp.

The costal border is nearly straight and the wing elongate. The scapular vein is much less arcuate than in the

preceding species, and has a comparatively small number of distant singly or doubly forked oblique branches. The much less oblique branches of the interno-median vein are more frequent, but appear less crowded from their simplicity, while those of the externo-median are more distant than the latter, and equally simple. There is no sign of any cross-venation. This species, like the preceding, is small, the wing measuring about 12 millim. long and 4.5 millim. broad. Named after Prof. Arthur Lakes, of the School of Mines at Golden, Colorado, the first discoverer of these fossils.

Triassic beds near Fairplay, Colorado.

XXXVIII.—*Remarks upon Lepidoptera collected in the Ellice and Gilbert Islands.* By Mr. C. M. WOODFORD*.

THROUGHOUT Mr. Butler's article in the March number of the 'Annals' the word "Tamana" should be substituted for "Tarawa" wherever it occurs (three times). It is an error caused by the similarity in the names of the two islands. Tamana I visited, Tarawa I did not.

1. *Junonia villida*.

This insect was extremely common upon all the islands that I visited, and I also noticed the larva, but cannot identify the food-plant.

2. *Hypolimnas varick*.

This was common at Tapetwea and at other islands in the Gilbert group, and I found the larva feeding upon a species of *Abutilon* (a specimen of the plant was left by me at the Natural-History Museum). At Nukufetau, in the Ellice group, I saw only a solitary specimen of *Hypolimnas* (a male), but could not capture it.

3. *Chærocampa erotoides*.

The single example brought was the only one I saw, and I took it from the head of a child, who had tied it by a thread attached to the insect's tongue, and fastened the other end to his hair. This accounts for the damaged state of the speci-

* Communicated by Arthur G. Butler, F.L.S., F.Z.S., &c.